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REMARKS

An Excess Claim Fee Payment Letter is Submitted herewith to cover the cost of two (2) excess independent claims.

Claims 1-4, 7-8, 27 and 34-39 are all the claims presently pending in the application. Claims 1-2 and 34 have been amended to further define the invention. Claims 35-39 have been added to claim additional features of the claimed invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claim 34 stands rejected under 35 U.S.C. § 112, first paragraph.

Claims 1-4, 7-8, and 27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anzai (U.S. Patent No. 5,923,933) combined with Japanese Patent No. 2000-267338 (JP '338).

Claims 1-4, 7-8, 27 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Suzuki et al. (U.S. Patent No. 5,630,201) combined with Diamond, *Handbook of Imaging Materials*, pp. 160-161 and Figure 4.1 (hereinafter "Diamond") and Ohno et al. (U. S. Patent No. 6,096,468).

These rejections are respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

Applicant's invention is directed to an image forming method which includes developing an electrostatic latent image formed on an image carrier with a developing device into a toner image using toners, **transferring the toner image onto a recording medium which includes a continuous sheet**, and fixing said toner image transferred onto the recording medium to thereby form a recorded image on a recording sheet.

In the claimed invention, a peripheral speed ratio ($S1 = Vm1 / Vp$) between the peripheral

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speed (V_{m1}) of said first developing roller and the peripheral speed (V_p) of said image carrier is set in the range of 0.8 - 2.0, and a peripheral speed ratio ($S2 = V_{m2} / V_p$) between the peripheral speed (V_{m2}) of said second developing roller and the peripheral speed (V_p) of said image carrier is set in the range of 1.05 - 2.0. In addition, the shape coefficients SF1, SF2 of said toners of the developing agent respectively satisfying the following conditions: $120 \leq SF1 \leq 170$ and $110 \leq SF2 \leq 130$.

Importantly, the method includes transferring the toner image onto a recording medium which includes a continuous sheet (Application at Figure 1) (Applicant submits that one of ordinary skill in the art would easily understand from Figure 1 of the Application that the claimed invention is intended to transfer the toner image on to a recording medium which includes a continuous sheet, since an exemplary aspect of the claimed invention (e.g., as illustrated in Figure 1) does not necessarily include a neutralization device for separating a sheet nor an erase lamp located on a backside of the transcriber for separating a recording sheet from a drum).

In addition, the method includes controlling a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member, by selecting a shape coefficient SF2 of toner particles in the toners to be within a predetermined range to restrict an occurrence of photographic fog.

The Application explains that by selecting the shape coefficient SF2, the claimed invention can control a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member formed between the first and second developing rollers, and an occurrence of a photographic fog can be restricted (Application at page 19, line 21-page 21, line 25; Figure 7). Thus, the claimed invention results in a better quality image than conventional methods.

II. THE 35 USC §112, FIRST PARAGRAPH REJECTION

The Examiner alleges that claim 34 is not enabled under 35 U.S.C. § 112, first paragraph. Applicant would submit, however, that this claim is clearly enabled by the specification.

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Specifically, as conceded by the Examiner, the Application discloses an exemplary embodiment in which a peripheral speed (V_p) of the image carrier is 1800mm/sec (Application at page 16, line 5). Applicant would point out that in this exemplary embodiment (e.g., as illustrated in Figures 5 and 6), the peripheral speed ratio $S1$ between the first developing roller and the photosensitive body is set at 1.3. However, the Application later states that:

"[i]n the above tests, the peripheral speed ratio $S1$ between first developing roller 61 and photosensitive body 1 was fixed to 1.3. However, in the case of the first developing roller 61, since the first developing roller 61 moves in the opposite direction to the moving direction of the photosensitive body 1 in the developing area, even in the case where the peripheral speed ratio is set small, there can be obtained the same effect as the above tests, which has been proved from various experiments. And, in the present invention as well, even when the peripheral speed ratio $S1$ is lowered down to 0.8, the above effect was maintained"
(Application at page 17, lines 17) (emphasis added).

Applicant would point out that since the speed V_p of the photosensitive body is given as the speed V_{m1} of the first developing roller over the peripheral speed ratio $S1$ (i.e., $V_p = V_{m1} / S1$), and since the above passage indicates that the effects obtained in the test may be obtained for a speed ratio $S1$ which is lower than 1.3, the clear implication from this passage in the Application is that the desirable effects of the claimed invention can be obtained for a speed V_p of the photosensitive body which is greater than 1800 mm/s.

In view of the foregoing, Applicant would respectfully submit that these claims are not indefinite. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. THE ALLEGED PRIOR ART REFERENCES

A. Anzai and JP '338

The Examiner alleges that Anzai would have been combined with JP '338 to form the claimed invention of claims 1-4, 7-8 and 27. Applicant would submit, however, that these references would not have been combined and even if combined, the combination would not

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teach or suggest each and every element of the claimed invention.

Specifically, these references are directed to different problems and solutions. Indeed, Anzai is directed to a method in which the ratio of sliding friction force is matched with other features to allegedly provide a uniform image, whereas, JP '338 is not directed to a method including two developing rollers (e.g., a center feed developing system). Therefore, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

Further, Applicant would submit that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, Applicant would point out that nowhere in the Examiner's arguments on pages 7-8 of the Office Action, does the Examiner identify any such motivation or suggestion to combine these references.

Specifically, on pages 7-8 of the Office Action, the Examiner merely alleges the following:

1) JP '338 toner "has superior powder characteristics, such as storage stability, and good offset resistance";

2) JP '338 toner "can be fixed without the use of a releasing oil ... when the releasing oil evaporates, an unpleasant smell may be given off or it may contaminate the inside of the imaging apparatus";

3) JP '338 states "according to the electrophotographic toner of this invention, when treated in a copying machine as a powder, there is no problem in the fluidity [of the toner]". The Examiner then states "[i]n other words, JP'338 teaches that its toner does not aggregate or stick to itself or to the components of the apparatus"; and

4) it would have been obvious to use the toner having shape coefficients of JP '338 in the Anzai image forming method "because [a person having ordinary skill in the art] would have had a reasonable expectation of successfully obtaining an image forming method that provides fixed toned images on recording media without offset and without unpleasant odors as taught by JP '338".

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However, although the Examiner alleges that the JP '338 toner includes some desirable properties, nowhere does the Examiner allege that these desirable properties are provided by or in any way associated with selecting the shape coefficients to be within any particular range. For example, the Examiner surprisingly alleges that one of ordinary skill would have used the toner having shape coefficients of JP '338 in the Anzai method to provide fixed toner images "without offset and without unpleasant odors".

Further, Applicant would point out that while JP '338 may disclose toner images "without offset and without unpleasant odors", these qualities are not provided by selecting the shape coefficients SF1, SF2 to be within any particular range. Insead, JP '338 states:

"[s]ince the image forming method of this invention using the electrophotographic toner of this invention fixes without intervening the oil for releases substantially in a fixing process, the problem accompanied to use of the oil for releases can be avoided, an image forming method with favorable offset resistance can be provided" (JP '338 at [0054]) (emphasis added).

That is, JP '338 clearly states that these qualities are provided by not using an "oil for releases", not by selecting the shape coefficients SF1, SF2 to be within any particular range.

Therefore, while the Examiner may have presented some evidence that one of ordinary skill in the art may have been motivated to modify Anzai using the teachings of JP '338 regarding not including any "oil for releases" in the toner, the Examiner has clearly failed to present any evidence that one of ordinary skill would have been motivated to modify Anzai to include the teachings of JP '338 regarding the ranges of shape coefficients. Thus, the Examiner has clearly failed to make a prima facie case of obviousness.

Moreover, neither Anzai, nor JP '338, nor any combination thereof teaches or suggests "transferring said toner image onto a recording medium which comprises a continuous sheet", as recited in claims 1 and 2.

Indeed, with respect to Anzai, Applicant would point out that the skilled person can easily understand from the description in column 7, lines 14- 49, and Figure 1 in Anzai that the printing paper sheet 14 in Anzai is "a cut sheet," contrary to the embodiment of the present invention.

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Although Anzai does not literally disclose "a cut sheet", it is clear from the disclosure in Anzai.

That is, in Anzai, the electrophotographic apparatus includes a blade member for removing a toner attached to the drum 1. A developing bias voltage of the developing rollers 61, 62 is applied. S1, S2 are defined in a predetermined range. A catch roller 63 containing a fixed magnet 53 is connected to a bias power source 73 having the same polarity as that of the charged voltage of the photosensitive body, and is supplied with a voltage nearly equal to the charged voltage of the photosensitive body. The catch roller 63 is effective for avoiding a fault in the transfer of carrier or damage to the photosensitive body by the carrier attached on the drum 1, even a pressure of the blade member with respect to the drum 1 is low, so that a load of the blade member is lower. The cleaner 29 contains the blade member 30 and a brush 31.

However, in complete contrast to Anzai, according to the embodiment of the invention, cleaning a carrier or photosensitive body attached on a drum is performed by both a brush 23 rotating and contacting with the photosensitive body 1 and a catch roller 63 including a magnet 53 (e.g., see Application at page 15, lines 9-12 and 20-24).

A stable, high image quality is achieved by a predetermined range of S1, S2 and SF1, SF2, even though the embodiment is different from Anzai's apparatus. Indeed, in the claimed invention, the range of S1, S2 is determined by reasons as described at page 7 lines 2-20, the range of SF1, SF2 is determined by a result of TEST 8 (e.g., see Application at Figure 7).

Further, the embodiment of the present invention does not assume the problem of Anzai, especially in the case where a pressure of the blade member with respect to the drum 1 is low. Thus, a technical problem which the claimed invention is intended solve, does not derive from Anzai.

In JP'338, the toner shape coefficients SF1, SF2 are determined to broaden the fixing temperature without off-set.

However, according to the embodiment of the invention, a toner shape coefficient SF1 is in a range from 120 to 170, and SF 2 is in a range from 110 to 130. A cleaning can be performed better owing to the range of the toner shape coefficients SF1, SF2 (e.g., Application at page 22 lines 21-24). Thus, the effect of the selecting the coefficients to be within a predetermined range

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in the claimed invention is clearly different from the effect which is desired in JP'338.

In addition, neither Anzai, nor JP '338, nor any combination thereof teaches or suggests *"controlling a stress applied to said developing agent between said first and second developing rollers and a developing agent distributing member, by selecting a shape coefficient SF2 of toner particles in said toners to be within a predetermined range to restrict an occurrence of photographic fog"*, as recited, for example, in claims 1 and 2.

As noted above, by selecting the shape coefficient SF2, the claimed invention can control a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member formed between the first and second developing rollers, and an occurrence of a photographic fog can be restricted (Application at page 19, line 21-page 21, line 25; Figure 7). Thus, the claimed invention results in a better quality image than conventional methods.

Clearly, these novel features are not taught or suggested by the cited references. Indeed, the Examiner concedes that Anzai does not teach or suggest selecting the shape coefficients of the toner (e.g., see Office Action at page 6), but alleges that JP '338 teaches the features of the invention and that Anzai would have been combined with JP '338 to form the claimed invention. Applicant would submit, however, that the Examiner is incorrect.

Specifically, the Examiner alleges that JP '338 teaches "a toner having shape coefficients SF1 and SF2 of 148 and 123" (Office Action at page 6). However, Applicant would point out that the claimed invention is not merely directed to a toner have shape coefficients in a particular range. Indeed, as exemplary aspect of the claimed invention is directed to an image forming method which includes controlling a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member, by selecting a shape coefficient SF2 of toner particles in the toners to be within a predetermined range to restrict an occurrence of photographic fog. This is clearly not taught or suggested by JP '338.

Indeed, JP '338 merely discloses a general "image development system" (JP '338 at [0003]). Nowhere does JP '338 even teach or suggest a center feed developing system, let alone a developing agent distributing member in a center feed developing system. Thus, certainly JP

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'338 does not teach or suggest any problems with a stress to a developing agent applied between first and second developing rollers and the distributing member. Therefore, it is unreasonable to suggest that JP '338 teaches or suggest controlling such a stress by selecting a toner shape coefficient to be within a particular range.

Therefore, Applicant would submit that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. Suzuki, Diamond and Ohno

The Examiner alleges that Suzuki would have been combined with Diamond, and that the alleged Suzuki/Diamond combination would have been further combined with Ohno to form the claimed invention of claims 1-4, 7-8, 27 and 34. Applicant would submit, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Suzuki discloses a development apparatus which is intended to improve a development pole of a plurality of development rolls and a rotation speed thereof (Suzuki at Abstract).

Diamond discloses a general method of developing an image using a dry toner (Diamond at pages 160-161).

Ohno discloses a toner having shape factors in a particular range in order to avoid "*melt-adhesion or filming of toner that occurs ... because of a shear force or rubbing force acting between the photosensitive member and the cleaning member and/or between the photosensitive member and the intermediate transfer member*" (Ohno at col. 8, lines 13-19).

Applicant would submit that these references are directed to different problems and solutions. Therefore, these references are completely unrelated, and no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

Further, Applicant would submit that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed,

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nowhere does the Examiner identify any such motivation or suggestion to combine these references.

Moreover, neither Suzuki, nor Diamond, nor Ohno, nor any combination thereof teaches or suggests "*transferring said toner image onto a recording medium which comprises a continuous sheet*", as recited in claims 1 and 2. That is, nowhere do any of these references teach or suggest a continuous sheet recording medium. Therefore, these references are completely unrelated to the claimed invention.

In addition, neither Suzuki, nor Diamond, nor Ohno, nor any combination thereof teaches or suggests "*controlling a stress applied to said developing agent between said first and second developing rollers and a developing agent distributing member, by selecting a shape coefficient SF2 of toner particles in said toners to be within a predetermined range to restrict an occurrence of photographic fog*", as recited, for example, in claims 1 and 2.

As noted above, by selecting the shape coefficient SF2, the claimed invention can control a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member formed between the first and second developing rollers, and an occurrence of a photographic fog can be restricted, resulting in a better quality image than conventional methods. (Application at page 19, line 21-page 21, line 25; Figure 7).

Clearly, these novel features are not taught or suggested by the cited references. Indeed, as noted above, Diamond merely provides a basic description of dry toner imaging. Thus, Diamond certainly does not teach or suggest controlling a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member, by selecting a shape coefficient SF2 of toner particles in the toners to be within a predetermined range to restrict an occurrence of photographic fog.

Further, the Examiner concedes that Suzuki does not teach or suggest selecting the shape coefficients of the toner (e.g., see Office Action at page 17), but alleges that Ohno teaches the features of the invention and that the alleged Suzuki/Diamond combination would have been further combined with Ohno to form the claimed invention. Applicant would submit, however, that the Examiner is incorrect.

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Specifically, the Examiner alleges that Ohno discloses shape coefficients within a particular range at col. 41, lines 10-56, col. 43, lines 19-22 and Col. 59, Table 3A. However, nowhere in this passage or anywhere else for that matter, does Ohno teach or suggest any association between the shape coefficients and a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member.

Indeed, Applicant would point out that Ohno does not even teach or suggest a center feed developing system. Instead, Ohno merely discloses an apparatus which includes a charging roller 2, a latent image bearing member 1, and an intermediate transfer member 5 (Ohno at col. 33, line 43-col. 34, line 49). Thus, Ohno does not even teach or suggest a developing agent distributing member (e.g., formed between first and second developing rollers).

Therefore, Ohno, is completely unrelated to an exemplary aspect of the claimed invention which has a purpose of controlling a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member. Indeed, nowhere does Ohno even recognize that such a stress exists on the developing agent in a center feed developing system.

Further, as noted above, Ohno discloses a toner having shape factors in a particular range in order to avoid *"melt-adhesion or filming of toner that occurs ... because of a shear force or rubbing force acting between the photosensitive member and the cleaning member and/or between the photosensitive member and the intermediate transfer member"* (Ohno at col. 8, lines 13-19).

However, Applicant would submit that a shear force or rubbing force acting between the photosensitive member and the cleaning member and/or between the photosensitive member and the intermediate transfer member is completely different than a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member. Indeed, Applicant would respectfully submit that the shape coefficients for avoiding the melt-adhesion or filming of toner in Ohno is likely different than the shape coefficients which may be selected for controlling a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing

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member.

Therefore, Ohno does not teach or suggest controlling a stress applied to the developing agent between the first and second developing rollers and a developing agent distributing member, by selecting a shape coefficient SF2 of toner particles in the toners to be within a predetermined range to restrict an occurrence of photographic fog. Thus, Ohno clearly does not make up for the deficiencies in the alleged Suzuki/Diamond combination.

Therefore, Applicant would submit that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-4, 7-8, 27 and 34-39, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

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Respectfully Submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Amendment was filed by facsimile with the United States Patent and Trademark Office, Examiner Janis Dote, Group Art Unit # 1756 at fax number (571) 273-8300 this 16th day of September, 2005.


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